

ABSTRACT OF THE DISCLOSURE

A phenol novolak resin has a peak intensity ratio of ortho-ortho bond (o-o)/ortho-para bond (o-p)/para-para bond (p-p) in a resin structure not substantially varying in each molecular weight fraction and has a weight average molecular weight (Mw) of 3000 to 20000 in terms of polystyrene, which peak intensity ratio is detected by ^{13}C -NMR analysis. The phenol novolak resin can form both dense pattern and isolation pattern with good shapes in the formation of a fine resist pattern of not more than 0.35 μm and has satisfactory sensitivity, definition, and focal depth range properties, and has a resin composition being uniform in each molecular weight fraction. A process for producing the phenol novolak resin, and a positive photoresist composition using the resin are also provided.